REMARKS

Claims 1 and 3-31 are pending in the above-identified application. The office action mistakenly lists claims 1-31 as pending, and is responsive to the application as filed on May 19, 2004 (See Office Action Summary, box 1). The examiner thus appears to have missed a preliminary amendment applicant mailed on January 27, 2006, which was received by the Patent Office on January 31, 2006. Applicant will attempt to respond to the outstanding rejections but encourages the examiner to carefully consider the impact of the prior amendment.

Rejections Under 35 USC §102

Claims 16-20 stand rejected under 35 USC §102(b) as being anticipated by Horowitz et al. (U.S. Pat. No.6,321,282; "Horowitz"). The rejection of claim 16 mischaracterizes a number of features of Figure 23 in Horowitz. Much of the apparent misunderstanding stems from a single misconception. Namely, the examiner considers Figure 23 of Horowitz to disclose a transceiver (see office action, page 2), which would require both transmit and receive components. In fact, Figure 23 of Horowitz depicts only a portion of a receiver. "Fig. 23 illustrates...an embodiment of Receive DLL/PLL 496" and a "Receive Timing Control Register 392" (Horowitz, 16:62-64 and 20:15). Because there is no transmitter, mixer 516 cannot be a transmit mixer as the examiner asserts. Further, the name of the "Receive Timing Control Register 392" by itself belies the assertion that element 392 is a "transmit phase controller." Indeed, none of the elements of claim 16 defined using the adjective "transmit" are evident in Figure 23 of Horowitz. The rejection of claim 16 should therefore be withdrawn.

The examiner additionally asserts that element 498 is a "reference clock source" that *produces a reference clock* as claimed. This too is incorrect. "Reference Loop 500 *receives as input a reference clock* signal C_o from Fine Loop Mixer 520" (Horowitz, 20:3-5, emphasis added). It is therefore mixer 520 that serves as a reference-clock source in Figure 23 of Horowitz. The rejection of claim 16 is improper for this additional reason, and should be withdrawn.

Claims 17-20 depend from claim 16, and thus distinguish Horowitz for at least the same reasons claim 16 distinguishes. Also of interest, the examiner asserts that element

520 is a "receive mixer" that derives a receive clock from clocks of different phases (office action, page 3). This is incorrect. Mixer 520 receives but one clock phase, and derives the reference clock signal C_0, and not the receive clock signal RCLK. The examiner identifies register 392 as the "receive phase controller" of claim 18. This position is inconsistent with the examiner's earlier assertion that element 392 is a "transmit phase controller" (see the rejection of claim 16).

Claim 19 recites "a resynchronizer that produces the transmit data..." There being no "transmit data," Figure 23 cannot include such a resynchronizer. Claim 20 recites "a serializer disposed between the resynchronizer and the transmitter." The examiner considers register 401 of Figure 16 in Horowitz to be "a serializer." Element 401 of Horowitz is not a serializer, however, and is not positioned as claimed. The rejections of claims 19 and 20 should thus be withdrawn for at least these additional reasons.

Rejections Under 35 USC §103

Claims 1-19, 21, and 24-29 stand rejected under 35 USC §103(a) as being unpatentable over Thibeault et al. (App. No. 200300117183) in view of Horowitz. It is not clear whether this rejection contemplates the preliminary amendment applicant filed in January, 2006, which amended claim 1 to include the language of original claim 2.

To establish a *prima facie* case of obviousness using a combination of references, the references (1) "must teach or suggest all the claim limitations," and (2) "there must be some suggestion or motivation... to modify the reference or combined reference teachings" (MPEP 706.02J). The examiner has failed to present such a case. With respect to the subject matter of original claim 2, now part of claim 1, the examiner believes that Horowitz teaches a phase adjustment circuit that "dynamically varies the phase of the first transmit data with respect to the second transmit data (Col. 20, lines 1-20)" (Office action, page 6). This assertion is not supported by the cited portion of Horowitz.

Applicant details embodiments that reduce the effects of crosstalk using either static timing offsets between aggressor and victim transmitters, or by dynamically altering the relative timing between aggressor and victim transmitters (See Para. [0018]). Static offsets are fixed. In some cases, however, a phase controller "continuously or

periodically" the setting of a phase mixer "to dynamically alter the timing of the transmitted signal or signals..." (See Para. [0035]). Some embodiments implement the dynamic phase changes by continuously counting between extreme phase positions, for example (*Ibid.*).

The portion of Horowitz that the examiner cites in support of dynamic phase variation of transmit data does not relate at all to transmit data. That portion describes Figure 23 of Horowitz, which depicts receiver components. Further, the dynamic phase variation of claim 1 is between first and second transmit data. To the extent that the receive circuitry of Figure 23 of Horowitz adjusts a phase, there are no first and second transmit data to adjust in relation to one another. Finally, the examiner points to nothing in either reference that supports the dynamic phase adjustment of the last element of claim 1. The rejection of claim 1 should therefore be withdrawn.

Claim 2 is canceled. Claims 3-7 depend from claim 1, and thus distinguish the cited combination of references for at least the same reasons claim 1 distinguishes.

Claims 8-15

Claim 8, as amended, includes a phase adjustment circuit that "dynamically varies the timing of the first transmit data with respect to the second transmit data." As noted previously, the examiner has shown no support for such dynamic phase adjustment. The rejection of claim 8 should therefore be withdrawn. In connection with claim 10, the language of which is now part of claim 8, the examiner argues that "Horowitz teaches the *phase adjustment circuit dynamically varies the timing of the first transmit data with respect to the second transmit data* (Col. 15, lines 31-52)" (Office Action, page 11). The relevant text and related Figure 20 are reproduced below for ease of review.

the V_{out} signal. The signal output by MUX **460** is coupled as an input to Comparator **464**. Comparator **464** compares the input signal from MUX **460** to a reference voltage, V_{ref}. The output signal from Comparator **464** is coupled to the Up/Down input of Counter **470**. If the MUX output is greater than V_{ref}, Comparator **464** forces Counter **470** to increase its count, and if the Mux output is less than V_{ref} then Comparator **464** forces Counter **470** to decrease its count. Comparator **464** drives its output signal up or down until the V_{out} signal causes the voltage at the selected tap of the resistive divider to equal V_{ref}. When this occurs, the current output by Output Current Driver **422** has reached the desired level indicated by the topography dependent parameter in Symmetry Control Register **396**. By setting the value of the topography dependent parameter stored in Symmetry Control Register **396** to select one of the different taps of Resistor Network **67 2**, an appropriate degree of asymmetry may be produced in the output voltage swing. Thus, the topography dependent parameter stored in Symmetry Control Register **396** can be used to adjust the midpoint between a high output voltage and low output voltage up or down relative to V_{ref}.

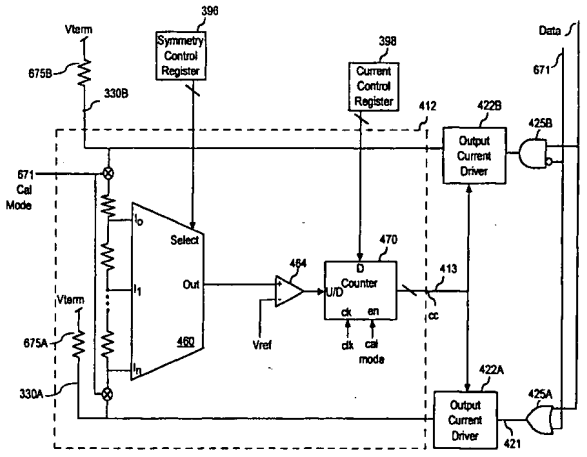

FIG. 20

Figure 20 shows but one driver, and thus cannot meet the first and second transmit data of claim 8. Further, applicant cannot see a phase adjustment circuit. This portion of Horowitz simply fails to teach the elements of claim 8, and thus cannot render claim 8 obvious.

Claim 10 is canceled. Claims 9 and 11-15 depend from claim 8, and consequently distinguish the cited references for at least the same reasons claim 8 distinguishes. The rejections of claims 11-15 should therefore be withdrawn.

Claims 16-19

Claim 16 stands rejected under §103, but applicant finds no grounds for the rejection. The only articulated basis of the rejection therefore appears to be the one noted above in connection with the §102 rejection. The rejection of claim 16 should therefore be withdrawn for the reasons presented above. Claims 17-19 depend from claim 16, so the rejections of those claims should be withdrawn for at least the same reasons the rejection of claim 16 should be withdrawn.

Claims 21-24

The examiner rejects claim 21 over Thibeault's Figures 18 and 19, in which the examiner finds support for "transmitting first and second data signals time (CLK0) to respective first and second transmit clocks..." (Office action, page 11). However, the receivers of Figures 18 and 19 both send data timed to the same transmit clock CLK0,

and not to different clocks as the examiner asserts. In addition, the examiner points to Thibeault's paragraphs [0093]-[0094] in support of adjusting the timing of one of two transmit clocks in response to monitoring for error signals. Paragraphs [0093] and [0094] of Thibeault, reproduced below, contain no such teaching.

> [**0093**] Each of the conductive paths **17** includes a transmission line **22** that has a series of inverting buffers I and non-inverting buffers N. Inverting buffers I invert the state transitions of the signals they pass, and non-inverting buffers N regenerate the state transitions of the signals they pass. In the system shown in **FIG. 22**, each of the transmission lines **22** has an alternating series of buffers, and the sequence of inversions and regenerations in the series of transmission lines **22***a* is different from (specifically, opposite to) the sequence in the series of transmission lines **22***b*.
>
> [**0094**] When the same state transition occurs on two adjacent parallel conductors at substantially the same time (e.g. two rising edges), each transition tends to speed the propagation of the other along its respective transmission line. When opposite state transitions occur on two adjacent parallel conductors at substantially the same time (e.g. a rising and a falling edge), each transition tends to slow the propagation of the other along its respective transmission line.

In failing to find support for each element of claim 21, the examiner's rejection is improper and should be withdraw.

Claims 22-24 depend from claim 21, and consequently distinguish the references for at least the same reasons claim 21 distinguishes. The rejections of claims 22-24 should therefore be withdrawn.

Claim 25

The rationale the examiner employs in rejecting claim 25 parallels the rejection of claim 8. "Horowitz teaches a *phase adjustment circuit that derives the first transmit clock from a reference clock signal and adjusts the first transmit clock to vary the phase of the first transmit data with respect to the second transmit data* (Col. 15, lines 31-52)." (Office Action, page 13). The cited portion of Horowitz, reproduced above in connection with Figure 20 of Horowitz, does not show a phase adjustment circuit or first and second transmit data that can be phase adjusted with respect to one another. The rejection of claim 25 is therefore improper and should be withdrawn.

Claims 26-28

Claim 26, as amended, is a system claim that recites dynamic phase adjustment in means-plus-function form. Per the amendment, claim 26 recites "dynamic phase-adjusting means for periodically or continuously adjusting [a] first transmit clock to vary the timing of ... first transmit data with respect to ... second transmit data." As discussed above in connection with claim 1 and others, the references do not support such dynamic phase adjustments. As such, claim 26 distinguishes the references and should be allowed.

Claims 27 and 28 depend from claim 26, and thus distinguish the cited references for at least the same reasons claim 26 distinguishes. The rejections of claims 27 and 28 should therefore be withdrawn.

Claim 29

Claim 29, as amended, recites a communication system in which "at least one of [an] aggressor transmitter and [a] victim receiver includes phase-adjustment circuitry adapted to dynamically alter the aggressor data phase relative to the victim data phase to reduce crosstalk from the aggressor transmitter to the victim receiver" (Claim 29, emphasis in original to show amendment). As discussed above in connection with claim 1 and others, the references do not support such dynamic phase adjustments. As such, claim 29 distinguishes the references and should be allowed.

Claims 30 and 31

Claims 30 and 31 stand rejected under §103 over Thibeault in view of Horowitz and further in view of Cioffi (U.S. Patent No. 5,887,032). Cioffi is used to show that crosstalk can be NEXT or FEXT. Claims 30 and 31 depend from claim 29, however, and therefore distinguish the references for at least the same reasons claim 29 distinguishes. The rejections of claims 30 and 31 should therefore be withdrawn.

New Claims

Claims 32-35 depend from claim 1, and consequently distinguish the references for at least the same reasons claim 1 distinguishes.

CONCLUSION

Applicant believes the pending claims to be in condition for allowance, and consequently requests the examiner issue a notice of allowance. If the examiner's next action is other than the allowance of the pending claims, the examiner is requested to call applicant's representative at (925) 621-2113.

I hereby certify that this correspondence is being deposited with the United States Postal Service as first-class mail addressed to: Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA. 22313-1450.

10/31/07
Date

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